

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action

Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: Expert Management Inc. (Formerly ICI Explosives USA Inc.)
Facility Address: 1 River Road, Tamaqua, PA 18252
Facility EPA ID #: PAD071203046

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

 X If yes - check here and continue with #2 below.
 If no - re-evaluate existing data, or
 if data are not available skip to #6 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)

Page 2

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **“contaminated”**¹ above appropriately protective risk-based “levels” (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale / Key Contaminants</u>
Groundwater		X		Riverdale Groundwater Report
Air (indoors) ²		X		No buildings are on this site
Surface Soil (e.g., <2 ft)		X		Post-excavation sampling report
Surface Water		X		Riverdale Groundwater Report
Sediment		X		Riverdale Groundwater Report
Subsurf. Soil (e.g., >2 ft)	X			Lead, mercury
Air (outdoors)		X		No surface soil or surface water sources

—— If no (for all media) - skip to #6, and enter “YE,” status code after providing or citing appropriate “levels,” and referencing sufficient supporting documentation demonstrating that these “levels” are not exceeded.

X If yes (for any media) - continue after identifying key contaminants in each “contaminated” medium, citing appropriate “levels” (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

—— If unknown (for any media) - skip to #6 and enter “IN” status code.

Rationale and Reference(s):

Expert Management Inc. currently owns the former ICI Explosives USA Inc. (EUSA) property. This property currently consists of 253 acres (Riverdale) bordering the Copperhead Chemical (CCCI) site. Previously, EUSA sold two parcels of land to CCCI; in 1997 (Corona property) and 1999 (Wakefield property). Before the parcels were sold, EUSA investigated the environmental conditions at the properties. Based on the results of those investigations, EPA determined that mostly low levels of contamination remained at the properties, with a few hot spots, and clean-up would be effectively accomplished under the RCRA closure and Act 2 programs in Pennsylvania. No further action under the EPA RCRA corrective action program would be necessary. EPA communicated these decisions to PADEP in letters dated August 22, 1997 and November 6, 1998. Subsequently, EUSA obtained Act 2 releases of liability for the 1997 CCCI parcel and the 1999 Wakefield parcel. In addition, EUSA transferred over 1500 acres to the Pennsylvania Game Commission. No industrial activities were conducted on this acreage, therefore no RCRA corrective action was required.

As a result of the activities described above, the only part of the original EUSA site actively under the RCRA corrective action program is the Riverdale parcel. The Riverdale property was used primarily for the burning of reactive hazardous wastes and the storage of these wastes prior to burning.

Several subsurface soil samples indicate lead hotspots above the direct contact screening value for non-residential land use. These hot spots are in the Former Burning Grounds, the Former Temporary Burning Grounds Staging Pile, and the Former Riverdale Waste Pile. ICI has submitted closure plans for these units to PADEP. The closure plans are currently under review. Lead has not been found in the groundwater above MCLs, therefore the soil contamination is not leaching into the groundwater.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)
Page 3

The groundwater has elevated levels of nitrate (above the MCL). Surface water nitrate levels are NOT above Pennsylvania surface water criteria. The surface water and the groundwater between the regulated unit (source of elevated nitrate) and the surface water are not used as drinking water sources. The facility does not allow wells to be drilled on site for drinking water purposes and plans to restrict the deed during any future sale to the same. Therefore, using MCLs as a clean-up goal is not applicable. ICI submitted a request for an ACL for nitrate in the groundwater. PADEP approved an ACL of 130 mg/l. Nitrate in the groundwater has been monitor at levels below 130 mg/l for the last 8 quarters. On October 12, 2001, PADEP approved ICI's request to no longer monitor the groundwater at the Riverdale property, as no hazardous constituents have been found above MCLs or the nitrate ACL in the last 8 quarters of sampling.

The Cap Reject Pit, a regulated unit, shows levels of mercury above the soil-to-groundwater screening number. One well, in the Blasting Supplies Manufacturing Area, consistently has had elevated levels of mercury, historically between 15ug/l and 23ug/l. In order to further delineate the mercury hit, the facility installed 5 hydropunches in May 2000, downgradient of the mercury hit. Two rounds of sampling were performed. The hydropunch data shows that the mercury in groundwater is limited to the one well. It is suspected that the mercury in the well is from contamination that occurred during construction of the well, rather than being indicative of groundwater conditions. Adjacent surface water has never shown mercury levels above MCLs or EPA surface water quality criteria. Water on this site is not used for potable purposes, and institutional controls over the land use will continue to restrict use of the groundwater.

References: **Post-Excavation Confirmatory Soil Sample Analytical Data Evaluation (9/28/99)**
 Report on Groundwater Conditions, Project Riverdale (1/12/01)
 Project Riverdale, Groundwater Sampling Results (Reports 1999-2001)
 Alternate Concentration Limit for Nitrate proposal to PADEP (7/18/01)

Footnotes:

¹ "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

² Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)
Page 4

3. Are there **complete pathways** between “contamination” and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Potential **Human Receptors** (Under Current Conditions)

<u>“Contaminated” Media</u>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food ³
Groundwater							
Air (indoors)							
Soil (surface, e.g., <2 ft)							
Surface Water							
Sediment							
Soil (subsurface e.g., >2 ft)				No			No
Air (outdoors)							

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors’ spaces for Media which are not “contaminated” as identified in #2 above.
2. enter “yes” or “no” for potential “completeness” under each “Contaminated” Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential “Contaminated” Media - Human Receptor combinations (Pathways) do not have check spaces (“___”). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

 X If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter “YE” status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

 If yes (pathways are complete for any “Contaminated” Media - Human Receptor combination) - continue after providing supporting explanation.

 If unknown (for any “Contaminated” Media - Human Receptor combination) - skip to #6 and enter “IN” status code.

Rationale and Reference(s):

The Riverdale property is an inactive. There are no workers, and no construction is anticipated. There is no complete pathway for soil exposure.

Reference: Post-Excavation Confirmatory Soil Sample Analytical Data Evaluation (9/28/99)

³ Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)

Page 5

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **“significant”**⁴ (i.e., potentially “unacceptable” because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable “levels” (used to identify the “contamination”); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable “levels”) could result in greater than acceptable risks)?

_____ If no (exposures can not be reasonably expected to be significant (i.e., potentially “unacceptable”) for any complete exposure pathway) - skip to #6 and enter “YE” status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”

_____ If yes (exposures could be reasonably expected to be “significant” (i.e., potentially “unacceptable”) for any complete exposure pathway) - continue after providing a description (of each potentially “unacceptable” exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”

_____ If unknown (for any complete pathway) - skip to #6 and enter “IN” status code

Rationale and Reference(s):

⁴ If there is any question on whether the identified exposures are “significant” (i.e., potentially “unacceptable”) consult a human health Risk Assessment specialist with appropriate education, training and experience.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)

Page 6

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)

Page 7

5. Can the “significant” **exposures** (identified in #4) be shown to be within **acceptable** limits?

- _____ If yes (all “significant” exposures have been shown to be within acceptable limits) - continue and enter “YE” after summarizing and referencing documentation justifying why all “significant” exposures to “contamination” are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

- _____ If no (there are current exposures that can be reasonably expected to be “unacceptable”)- continue and enter “NO” status code after providing a description of each potentially “unacceptable” exposure.

- _____ If unknown (for any potentially “unacceptable” exposure) - continue and enter “IN” status code

Rationale and Reference(s):

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

 X YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the **Expert Management Inc.** facility, EPA ID # **PAD071203046**, located at **1 River Road, Tamaqua, PA**, under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

 NO - "Current Human Exposures" are NOT "Under Control."

 IN - More information is needed to make a determination.

Completed by (signature) _____ /s/ _____ Date 10/5/01
 (print) Linda A. Matyskiela
 (title) Sr. Environmental Engineer

Supervisor (signature) _____ /s/ _____ Date 10/5/01
 (print) Paul Gotthold, Chief
 (title) PA Operations Branch
 (EPA Region or State) EPA Region III

Locations where References may be found:

All documents relating to this site may be found in the EPA Administrative Record at the EPA Offices

Post-Excavation Confirmatory Soil Sample Analytical Data Evaluation (9/28/99)
Report on Groundwater Conditions, Project Riverdale (1/12/01)
Project Riverdale, Groundwater Sampling Results (Reports 1999-2001)
VOC Verification Resampling -Project Wakefield Report (6/27/01)
Alternate Concentration Limit for Nitrate proposal to PADEP (7/18/01)

Contact telephone and e-mail numbers:

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FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.